

investigation he has attempted to show quantitatively the influence of nutrition. In the two ferns investigated, he found that the development of the two sex organs could be controlled by certain concentrations of Knop's solution. In general, the number of antheridia decreases as the concentration decreases. In both species archegonia are formed only above 0.175 per cent Knop's solution, which was the optimum concentration for *Asplenium*; but 0.35 per cent was the optimum for *Osmunda*. In many of the prothallia of *Asplenium* the two sex organs appeared only successively. The prothallia of *Osmunda* remained almost completely sterile when grown in solutions lacking calcium or magnesium salts. Numerous combinations of conditions were used, with varying results, and the evidence all indicated that the production of sex organs is a response to factors in the environment.—J. M. C.

**Indiana Academy.**—The Proceedings of the Indiana Academy of Sciences for 1914 contains the following contributions of interest to botanists: An apparatus for aerating culture solutions, by PAUL WEATHERWAX; Antagonism of *B. fluorescens* and *B. typhosus* in culture, by P. A. TETRAULT; Notes upon the distribution of forest trees in Indiana, by STANLEY COULTER; Mosses of Monroe County, Indiana, by MILDRED NOTHNAGEL and F. L. PICKETT; A new enemy of the black locust, by GLENN CULBERTSON; A new leaf spot of *Viola cucullata*, by H. W. ANDERSON; Oat smut in Indiana, by F. J. PIPEL; Plants new or rare to Indiana, by C. C. DEAN; Some peculiarities in *Spirogyra dubia*, by PAUL WEATHERWAX; Report on corn pollination, by M. L. FISHER; Stomata of *Trillium nivale*, by F. M. ANDREWS; The primrose-leaved violet in White County, by L. M. HEIMLICH; Continuous rust propagation without sexual reproduction, by C. A. LUDWIG; Correlation of certain long-cycled and short-cycled rusts, by H. C. TRAVELBEE; Some species of *Nummularia* common in Indiana, by C. E. O'NEAL; The genus *Rosellinia* in Indiana, by G. B. RAMSEY; Some large botanical problems, by J. C. ARTHUR.—J. M. C.

**A new genus of Bennettitales.**—THOMAS<sup>31</sup> has described a new genus of Bennettitales (*Williamsoniella*) based upon material obtained from mesozoic beds in Yorkshire. It is represented by buds, mature strobili ("flowers"), microsporophylls, and the ovulate portions of the strobili. The strobilus is bisporangiate and very small, with no ensheathing sterile bracts; 12-16 wedge-shaped microsporophylls, each bearing 4-6 synangia; sessile ovules, "very similar in external appearance to the interseminal scales"; and the sterile tip of the strobilus axis terminating in "a characteristic corona-like structure" (which suggested the specific name, *W. coronata*). In all probability these strobili were borne in the forks of dichotomously branching stems, whose leaves had been known as *Taeniopteris vittata*. A "flower bud," thought to belong to the same genus, is named *W. roseberriensis*. The marked features

<sup>31</sup> THOMAS, H. H., On *Williamsoniella*, a new type of Bennettitalean flower. Phil. Trans. Roy. Soc. London B 207:113-148. pls. 12-14. 1915.